

Denbigh Field Station

I. The Area and Problem

The Denbigh Field Station, a unit of the Bottineau Research Center is located in McHenry County, $\frac{1}{2}$ mile south of U. S. Highway 2, about 2.5 miles southwest of Denbigh, North Dakota. It is 52 miles or an hour's drive from Bottineau cross country. It comprises Section 36 of T156N, R78W, the NW $\frac{1}{4}$ NW $\frac{1}{4}$ of which is federally owned and the remaining 620 acres under long term lease from the state through the North Dakota School of Forestry at Bottineau.

During the period of 1931-1944, the Lake States Station established 270 acres of experimental plantings, over half of which were conifers (Figure 1). This fire plan is designed primarily to provide intensive fire protection to these plantings which are invaluable for their tree improvement and demonstrational values. The plan will also consider protection of new plantings scheduled for 1961 and subsequent years.

The station and adjacent lands are sand hills and flats. Except for the plantations, the ground cover consists of grassland with clumps of native aspen and brush. The nature of the soil and the low precipitation, low humidity, and high winds which characterize the prevailing weather tends to produce highly inflammable fire fuels, chief of which are the prairie grasses. High hazard seasons for fire include late fall after the frosts have killed the grass until the establishment of a snow cover, and early spring between snowmelt and regrowth of the grass cover.

II. Past Efforts

Fire control from 1931-1944, while personnel was in residence at Denbigh, relied on a system of plowed fire lanes and direct suppression equipment. Five miles of double one rod-wide fire lanes were maintained in and around the planting area. Hay was harvested on unplanted lands to the east to reduce the amount of fuel.

Suppression equipment included a pump and power unit of 1500 gallons per hour capacity mounted on a 2-wheel trailer. Five open-pool wells (Figure 1) supplied water delivered to the fire through 12,000 feet of hose. Other equipment included a 3-bottom plow tractor and plow and a pickup truck equipped with 8 back pumps and other small tools for direct fire control.

During the period of 1944 to 1956 fire detection and suppression was a joint responsibility of the Lake States Station through part-time employees and local ranchers located across the road to the west and on the south line. Fire lanes were maintained in part, particularly those located along the main roads.

①
Since 1958 firebreak maintenance has been continued and additional lanes restored to effectiveness by the use of heavy equipment owned by McHenry county. Presuppression activities have included posting, occasional patrol, and the exchange of hay cutting rights for fire detection and suppression services from the local ranchers. In 1958 the North Dakota Forest Service initiated an active program of fire control on woodlands and grasslands and placed a cache of tools on the Harold Stewart ranch. This was later removed to the Dan Kelly ranch.

A convenient source of water was provided by the installation of a new well and electrically powered pump at the office-dwelling.

III. Presuppression

Presuppression activities will include:

1. An adequate and enlarged system of firebreaks and access roads.
2. Fuel reduction along roads, firebreaks, and in adjacent grasslands.
3. A full-time fire guard to be stationed at Denbigh during high hazard periods to patrol and suppress fires.
4. Posting of the area, continued and intensified.

5. *Training of personnel in use of fire fighting equipment.*

Fire lanes -

The present system of 3.5 miles (Figure 1) of single lane one-rod wide firebreaks will be maintained and improved by the removal of sodded areas and brush. Regular maintenance will be as needed, but not less than twice over annually. A new tractor (IHC-340) equipped with 3-point hitch, will be housed at the Station and will be used in this work. Proposed fire lanes along the east side of the NW $\frac{1}{4}$ and on the SW $\frac{1}{4}$ SW $\frac{1}{4}$ will require some leveling by a bulldozer but can be constructed for the most part with the tractor.

Extension of system

②
New fire lane construction will be completed prior to the deer hunting season or November 15 (with the possible exception of the dozing).

Inspection

There will be two inspections
[Inspections will be two in number as follows:]

- a. Spring inspection will be made after snow melt or by May 1st. Special attention will be paid at this time to the need for new lanes to protect additional planting areas to be added during the year, and needed maintenance to present system.
- b. Fall inspection will be made by August 21 timed to the end of the main growth of weeds for the season.
- c. Inspections will be made by the Research Center leader or someone designated by him.

Maintenance

Fire lanes will be disced in late spring or before June 15 and in late summers or prior to September 1.

Fuel reduction

Borders of fire lanes and roads will be mowed at the same time the fire lanes are worked in late spring and late summer. [A permit for hay harvest will be issued to Dan Kelly for the reduction of fuels in the unplanted area comprising the E $\frac{1}{2}$ SE $\frac{1}{4}$ and S $\frac{1}{2}$ NE $\frac{1}{4}$.]

Fire Guard

A full-time fire guard headquartered at the Denbigh Station will patrol the area during high-hazard seasons. A vantage point for detection is afforded by a high sand ridge in the SW $\frac{1}{4}$ SW $\frac{1}{4}$.

- a. Any high-hazard period when the burning index indicates extreme fire danger. A device such as a zerometer, or duff moisture meter will be obtained and used by the Center Leader to supplement information obtained from the North Dakota Forest Service to determine these periods for assigning the guard.
- b. The deer hunting season (not set for 1960 but usually 3 days around Armistice Day) and the opening 2 days of the Upland Game Season (late September).

Posting

Fire posters with messages more direct and applicable to the local situation than those prepared for forested area will be developed by the Center Leader and his staff to supplement those made available from other sources. Signs will be replaced by May 1 and September 1 of each year.

IV. Suppression

~~Suppression~~ ^{4.} Direct suppression of fires will be the responsibility of the guard during ^{these} high hazard periods. For the remainder of the year, the permittee Dan Kelly will be the keyman to suppress small fires and to alert the Center and other cooperating agencies (Table 1). As a state fire warden and a local rancher he can enlist the aid of the North Dakota Forest Service.

As a state warden he can call on the organization and equipment of the North Dakota Forest Service for assistance if needed and available. This equipment includes a jeep-mounted pumper with fog nozzle and many hand pumps and tools. He will also have access to the Station tractor plow and other tools. When funds are available a trailer equipped in like manner to the pickup will be kept in readiness at the Denbigh warehouse at times when the pickup is not stationed there.

(5)

Other available equipment for large fires includes a tractor-plow and disk unit at the laboratory, and a pump and power unit of 1500 gallon capacity. This can be loaded unto a pickup. Water can be delivered to the fire from 5 strategically located wells (Figure 1) and a stock dugout to the north of the arboretum. Additional hose will be acquired as it becomes available through surplus. Another source of water is an electric pump located in the office-dwelling unit. The unit is rated at 250 gallons per hour.

V. Miscellaneous

No establishment of a limited recreational area is planned at this time since it is felt that such a facility would increase the hazard by attracting more users. Such an area would necessitate grounds maintenance throughout the outdoor season.

COOPERATING AGENCIES & COMMUNICATIONS

DEPARTMENT	DENBIGH STATION	AREA SERVED	CHIEF & PERSONNEL	EQUIPMENT	PHONE
Granville	'9.4 miles west 'on U. S. 2	'Saline Township 'Granville Town- 'ship, Hendrick- 'son Township 'north of Surray 'cutoff. Over-lap 'into Towner 'territory.	'Chief: Bill Hanks 'Volunteer Dept. 'consisting of 30 'members living 'in Granville	'International 3/4 'ton pickup 'IHC 1½ ton truck 'and 500 gallon 'booster tank, 500 'gal. per minute 'pumper '2 hose carts '3000 feet hose '2 Indian back pack 'pumps '5 axes, ladders, etc.	'Day : 4393 'Night : 4394 ' 'Police : 4001 ' 'Call these numbers 'through Towner 'exchange
Towner	'14.6 miles east 'on U. S. 2	'Approximately 10 'townships in area 'of Towner. Area 'extends west to west 'Denbigh Township 'line and does not 'include Riga Town- 'ship. Overlaps into 'Granville Territory.	'Chief: Graham 'VanCamp. Volunteer 'Dept. of 25 members 'living in Towner.	'Ford 1938 1½ ton pickup '400 gal. water on truck 'with 450 g.p.m. pumper. 'Will pump while truck 'is in motion. 'Hose, 152' booster hose '350' spare hose, 1½" & '2½", 2 Indian back pack 'pumps, 2 CO ₂ estingush- 'ers, Shovels, axes, etc.	'KEystone 7-3131
Fire Warden (N. Dak.)	'1 mile south 'of Denbigh Station 'H.Q.		'Warden: Dan Kelly 'Volunteers are all 'in the area. Most 'persounel furnish 'own tools	'Tool cache contains: '2 swatters, 2 shovels, '2 back-pack pumps	'KEystone 7-6307
North Dakota Forest Service, Bottineau	'52 miles	'Turtle Mountains 'primarily		'Jeep pumper, 100 gallons 'high pressure (400 lbs) 'fog nozzle	'(Bottineau) 378